

**Abstract**

A method and a damping device are proposed for damping a torsional oscillation in a rotating drive train. Arranged on the drive train is an electrical machine (13), which is connected to an electrical multipole (31). A damping torque is generated in the electrical machine (13) by an electrical damping member connected to the electrical machine (13). It is proposed that the damping torque has a predetermined damping frequency and is antiphase to the angular velocity of the torsional oscillation.